South Central Region, Area 1

Integrated Roadside Vegetation Management Plan

October 2006

Washington State Department of Transportation
Maintenance and Operations Division

Executive Summary

The Washington State Department of Transportation (WSDOT) manages approximately 580 miles of roadside right-of-way throughout King and Kittitas counties. This right-of-way is part of the state highway system including US 195, SR 27, SR 26, SR 23 as well as several other state routes in the area. A map of state highways and routes in this area is attached or can be accessed at http://www.wsdot.wa.gov/maintenance/vegetation/default.htm.

As a landowner in this area WSDOT is required to control all listed noxious weeds that occur on this right-of-way by state law (RCW 17.10 and 15.15.010). It is important to WSDOT to not only meet the legal requirements, but also to consider the needs and concerns of adjacent landowners in this area.

In order to better manage these roadsides WSDOT is in the process of developing an Integrated Roadside Vegetation Management (IRVM) plan for this area. This plan will serve as the primary guidance document for maintenance of roadsides in this area and will provide detailed weed control and planting guidance as well as overall policy and procedures. This plan supports WSDOT's long-range goals of managing these roadsides to:

- Reduce maintenance costs
- Improve weed control
- Enhance roadside vegetation by providing stable, sustainable plant communities

The attached plan consists of four main sections, 1) introduction, 2) description of roadside concepts and WSDOT policies, 3) the main body of the plan document and 4) the appendices. The "**Introduction**" provides a background that has lead to the development of the plan as well as references to other pertinent guidance documents. The "**Description Section**" deals with roadside character and maintenance considerations and gives the reader an overall understanding of the WSDOT roadside program. The "**Plan**" is the main body of the document and includes detailed descriptions of specific maintenance activities, policies and objectives. The "**Appendices Section**" contains prescriptions for weed control and revegetation, noxious and nuisance weed locations, locations of special maintenance areas, forms and records, and a list of local public and private stakeholders.

This plan is a dynamic document that will be developed and updated over time with input from a variety of sources. WSDOT will be requesting comments and suggestions from local private and public entities during 2005-2006 by public notifications, letters and personal communications. A working draft version of the IRVM plan will be accessible in an electronic form at http://www.wsdot.wa.gov/maintenance/vegetation/default.htm or available in hard copy upon request. Please contact Galen Rogers or Steve Underwood at the numbers listed below for questions or comments.

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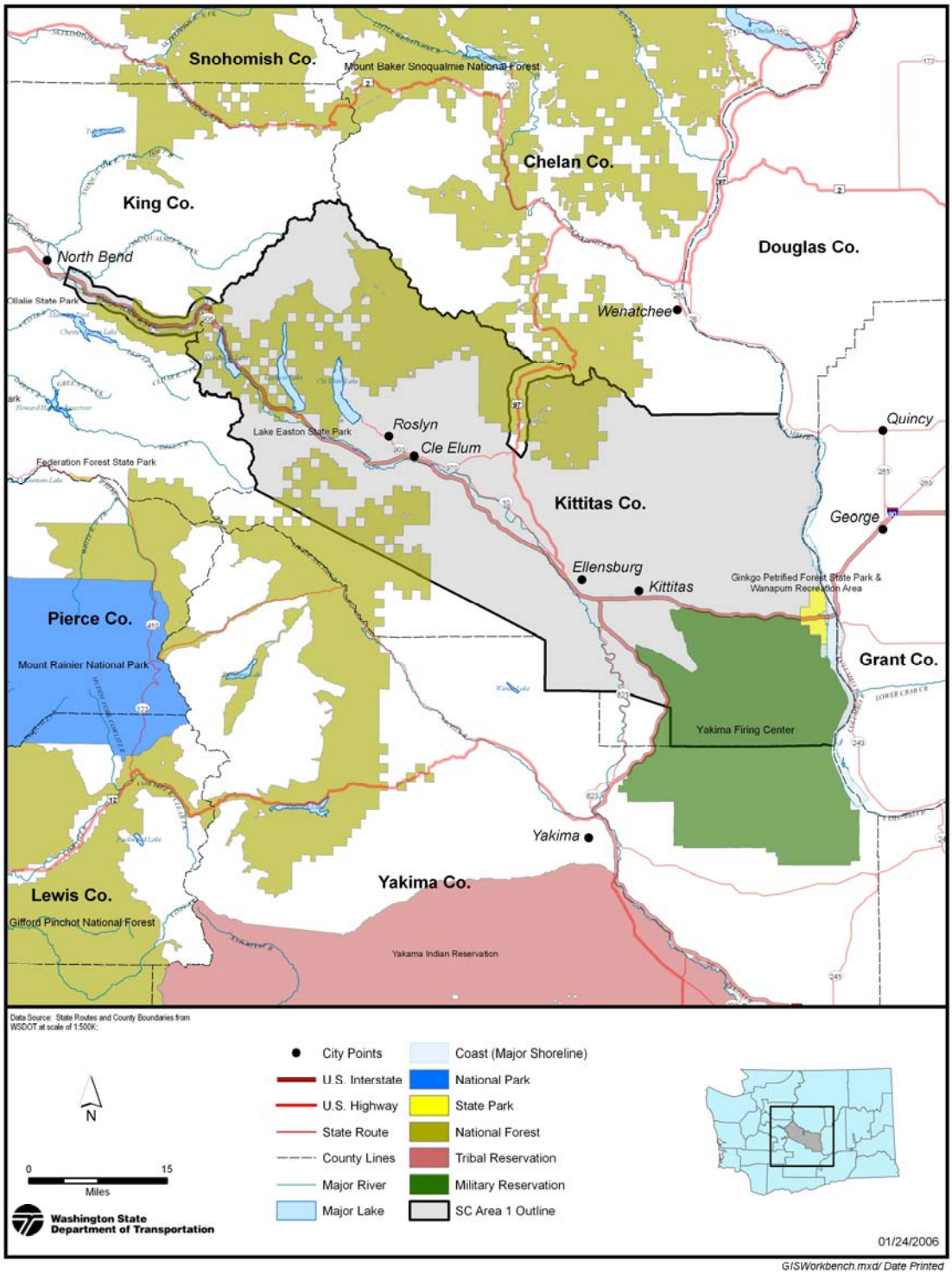

Vicinity Map
Figure 1

Program Goals

The purpose of this section is to identify short and long term operational goals within SC Region, Area 1. These goals will help direct decisions that effect roadside management and the construction of roadside. These goals will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Term Goals (2006-2010)
Long-term goals should be achievable within a 5 year period of time and have clearly stated objectives. Long-term goals may be general in nature and should provide direction for short term operational goals.

1. Eliminate zone 1 bare ground throughout SC Region, Area 1 from all roadsides including guardrail sections as follows.
    a. 2005: Eliminate residual applications to zone 1 on:
        - I-90 MP 33.3 to MP 69
        - SR 821 MP 13 to 25
        - SR 903 MP 0 to 10
    b. 2006: Eliminate residual applications to zone 1 on:
        - I-90 MP 69 to MP 101 (Easton Hill)
        - SR 903 entire section
        - SR 970 entire section
        - I-82 MP 2 to MP 1 westbound right shoulder
    c. 2007: Eliminate residual applications to zone 1 on:
        - I-82 MP 0 to 15 entire section
        - I-90 MP 101 to MP 118
        - SR-10 entire section
        - SR 97 MP 144.5 to MP 149.5
    d. 2008: Eliminate residual applications to Zone 1 on:
        - SR 97 MP 134 to MP 144.5
        - I-90 MP 118 to MP 137

Short-Term Goals (2006-2007)
Short-term goals should be attainable within a 1-2 year period of time. Short-term goals should be specific goals with clear objectives that can be measured and reported.

Zone 1

1. Eliminate zone 1 bare ground throughout SC Region, Area 1 from all roadsides, with minor exceptions to meet specific operational needs sections as follows.
    a. 2006: Eliminate residual applications to zone 1 on:
        - I-90 MP 69 to MP 101 (Easton Hill)
        - SR 903 entire section
        - SR 970 entire section
        - I-82 MP 2 to MP 1 westbound right shoulder
    b. 2007: Eliminate residual applications to zone 1 on:
        - I-82 MP 0 to 15 entire section
        - I-90 MP 101 to MP 118
        - SR-10 entire section
        - SR 97 MP 144.5 to MP 149.5

2. Establish and monitor zone 1 test plots on I-90 MP. 113

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Roadside Maintenance Considerations

The primary objectives for maintenance of roadside vegetation are:

- Provide safe highway operation
- Comply with legal regulations for control of noxious weeds
- Protection of the environment

Overall WSDOT maintenance policy and procedures are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002)
www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf

Visual Quality
All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread "brown-out" from herbicides or shattered limbs from side trimming. Roadsides should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996)
www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf

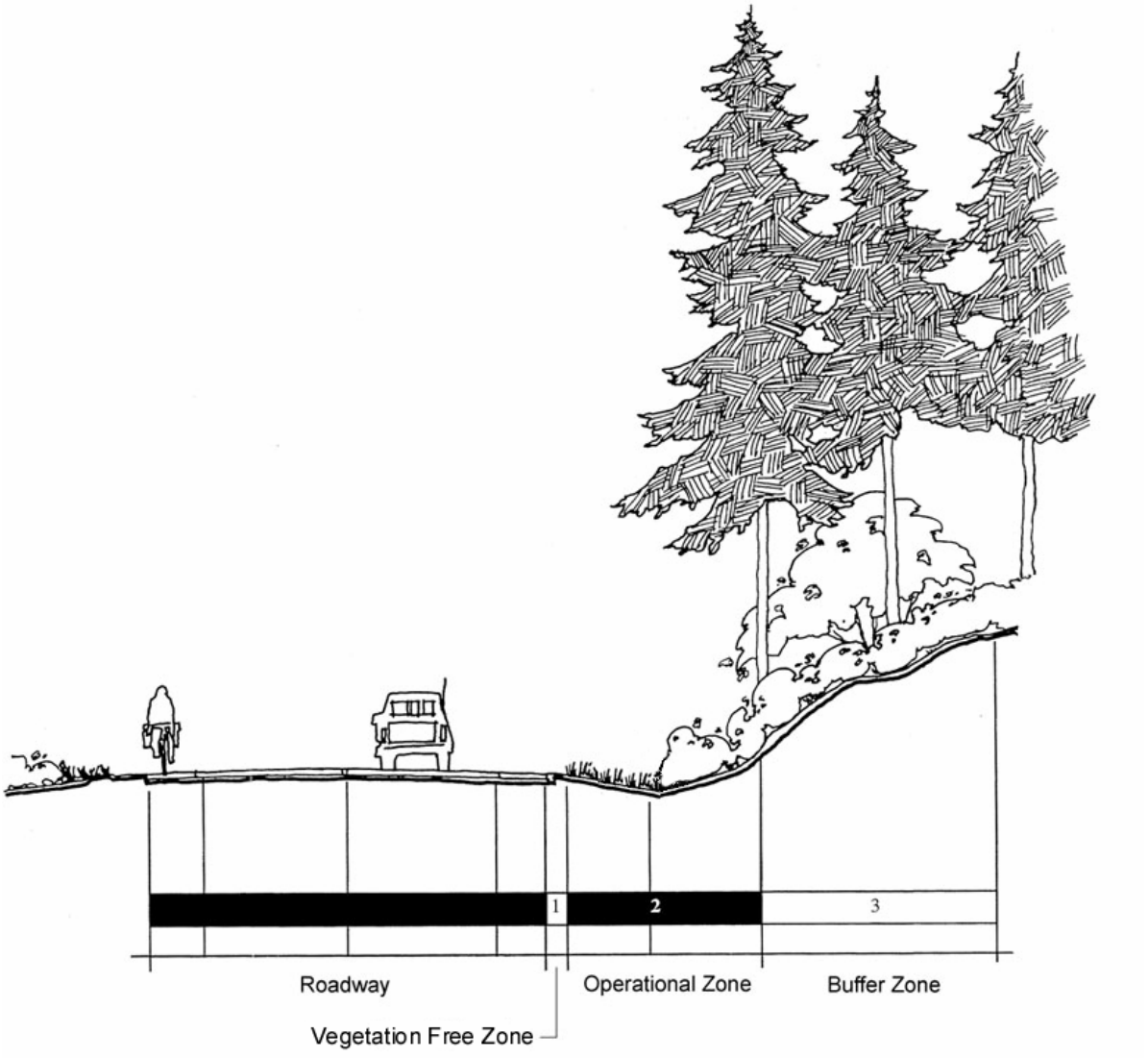
Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance intensities, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all maintenance zones will occur along state highway on SW Region, Area 4. In many cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and a narrow Zone 2 only. Roadside vegetation management zones are as follows:

Zone 1 – Where necessary, a vegetation free gravel shoulder is maintained to provide for key operational, safety and pavement preservation needs.

Zone 2 – The operational zone extends from the edge of Zone 1, or the pavement edge, to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions. This zone must be free of vegetation with trunk diameter greater than 6". Where guardrail exists there is no requirement to maintain the vehicle recovery zone. The goal of vegetation management in Zone 2 is to:

- Encourage the growth of stable low growing desirable plant communities
- Control noxious weeds
- Reduce routine maintenance costs
- Reduce erosion and stabilize the roadway shoulder
- Support roadside operational and safety needs

Zone 3 – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.



Vegetation Free Zone
Gravel Shoulder
Maintained using mechanical and chemical methods to improve drainage and protect pavement.

Operational Zone
Low Vegetation
Maintained by mowing and IVM for sight distance, safety, and weed control.

Buffer Zone
Native/ Natural Vegetation
Maintained using IVM to encourage native self-sustaining plant communities.

Typical Roadside Vegetation Management Zones
Figure 2

Special Considerations

Herbicide sensitive Areas
An Herbicide Sensitive Areas consist of all locations within 60' of salmon bearing streams or water body. Herbicide Sensitive Areas as described in court order of Washington Toxics Coalition vs. EPA (http://www.epa.gov/EPA-PEST/2004/March/Day-24/p6610.htm) occur throughout this maintenance area. Only approved herbicides will be used in these areas (http://agr.wa.gov/PestFert/EnvResources/Buffers.htm#maps).

Special Maintenance Areas
This plan also defines and identifies areas with unique roadside maintenance requirements or where arrangements exist due to the surrounding land use, neighbor concerns or specific highway related functions. Special maintenance areas in include highway roadsides sections with agreements for maintenance by neighbors. These areas are further defined in **Special Maintenance Areas, Section 3**.

Public Notification of Herbicide Applications
WSDOT is required by law to notify chemically sensitive individuals on file with Washington State Department of Agriculture, where the residing property abuts the highway right of way and the residence is within ½ mile of the property line. Notification to chemically sensitive individuals is accomplished by letter and/or phone conversation prior to each application. For specific herbicide application schedules, the roadside vegetation maintenance personnel can be reached at 509.577.1908.

Herbicide Safety
When applying herbicides WSDOT takes precaution to avoid any impact on human and environmental health, and to ensure herbicides do not move off target. Applications are made only by trained and licensed employees following all state and federal regulations as well as all recommendations and restrictions given on the individual product labels as approved by the US Environmental Protection Agency.

WSDOT has also conducted a risk assessment for the herbicide products and application methods used on state highways. Toxicological impacts of WSDOT practices were evaluated for human health (both operators and the general public), for aquatic ecosystems, and terrestrial wildlife. The findings of this assessment are summarized in a series of fact sheets for the individual herbicides used by WSDOT. These fact sheets can be viewed and downloaded through the Internet at: http://www.wsdot.wa.gov/biz/maintenance/htm/risk_assessment.htm, or copies may be obtained by calling the WSDOT Headquarters Maintenance Office at (360) 705-7850.

WSDOT Employee Training and Education
Perhaps the most important key to success in the implementation of this plan is the education and training of the maintenance employees responsible for delivery of the program on a day-to-day basis. This plan and the information resources it provides is intended to supplement and enhance existing training and education opportunities already in place. Training and education for employees engaged in delivery of the roadside vegetation management will include:

- Participation in an annual one-day spring review of vegetation management needs and activities from the previous year, and planning for the coming year, including the maintenance crew(s), supervisor, and area maintenance superintendent and/or assistant superintendent.
- Development of a field guide using representative photographs taken along the highway in to illustrate key aspects of IVM treatment. This will be developed over the first several years of plan implementation.
- Attendance at the annual statewide WSDOT Roadside Vegetation Management Workshops, where there is a focus on IVM tools and procedures, proper and safe use of herbicides, and lessons learned from around the state.

- Ongoing participation and communication with the public and private sector. This includes involvement in local weed board meetings, public events as well as communication with neighboring landowners and municipalities.
- Annual Winter Planning Meeting held in each Maintenance Area

Roadside Design and Construction Considerations

Highway and utility construction in many cases has a significant impact on drainage, soils and vegetation adjacent to the paved roadway. WSDOT policy and practice for restoring the operational, environmental and visual functions disturbed by construction is based on the guidelines found in the Roadside Classification Plan (RCP) (WSDOT 1996), and the Roadside Manual (WSDOT M25-30, July 2002).

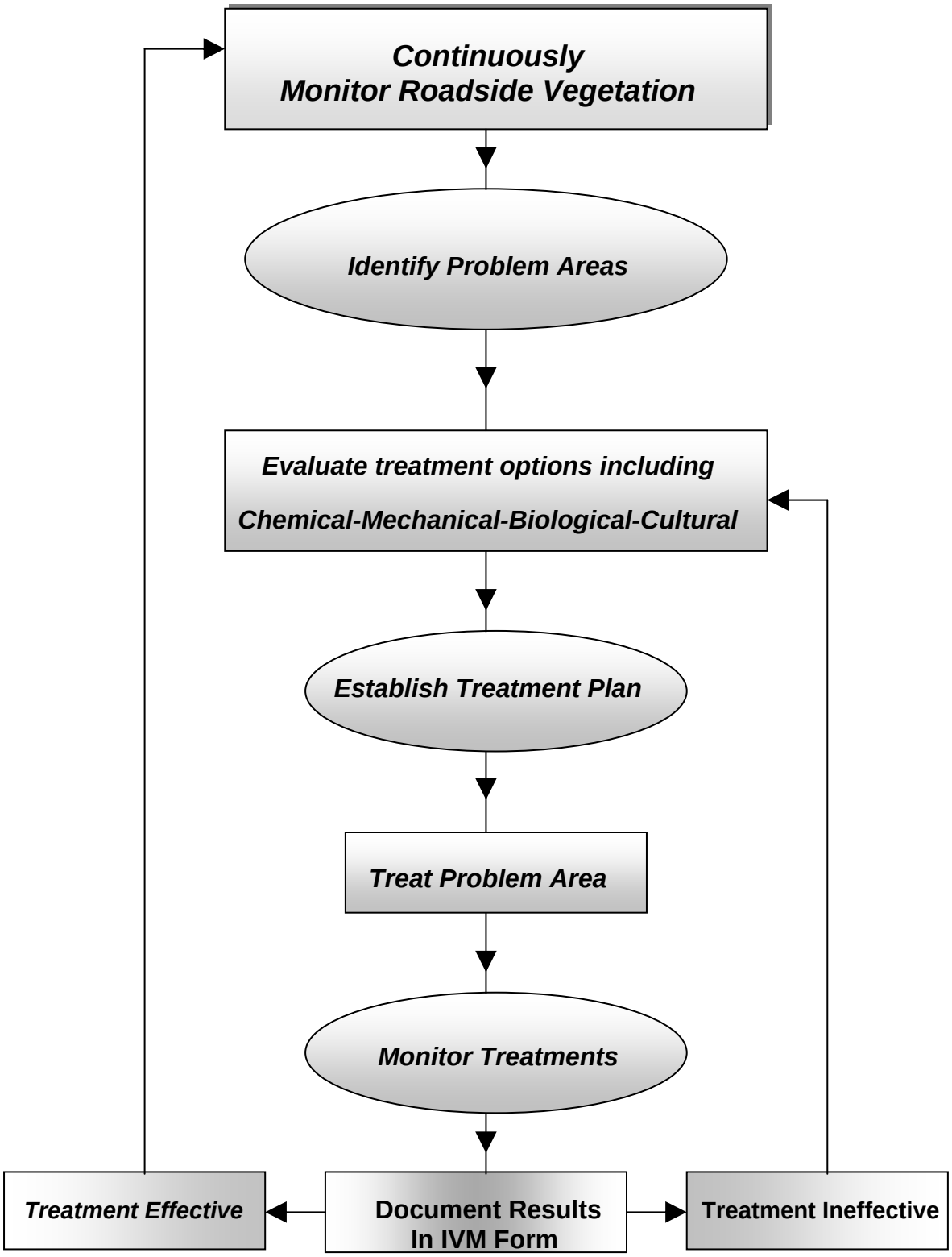
Internal agency coordination between the Design, Construction, and Maintenance programs is imperative to a comprehensive roadside vegetation management plan. A commitment to increasing communication in these areas is an important component in an ongoing effort to reduced lifecycle costs and improve roadside vegetation. This commitment has been recognized and agreed to by the regional management team.

Below is a list of design/construction projects that may have impacts to roadsides in the next 2-4 years:

- I-82 Thrall Road to Manastash, Climbing Lane, Pre-design in 2006, construction unfunded
- SR 903 - Cle Elum to National Forest Boundary – Paving, currently in the design phase
- I-90 Snoqualmie Pass East, Hyak to Keechelus Dam, currently in early design, construction by 2010.
- *WSDOT South Central Region Projects Link:* *http://www.wsdot.wa.gov/Regions/SouthCentral/Projects/*

Below is a list of permitted utility projects that are scheduled for construction within the next 2-4 years.

- I-90 PSE Gas Line installation approximately 2 miles in length at MP. 93



The IVM Decision-Making Process
Figure 3

1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when regular annual treatment is required because vegetative growth annually or regularly exceeds action thresholds. Typical routine maintenance activities include maintenance of Zone 1 and certain types of mowing and trimming.

1.1. Routine Shoulder Maintenance (Zone 1)

1.1.1. Policy and objectives

Historically the edge of pavement or zone 1, has been maintained to be free of vegetation. This vegetation free zone has typically averaged approximately 4' to 6' in width throughout the Area. In 2002 the Area began eliminating zone 1 in a series of test plots. During the spring of 2006 the decision was made to eliminate Zone 1 on all roadsides by 2008. Over the next three years, Zone 1 treatments will be reduced by 1/3 each year. Zone 1 treatments may continue in other areas for special safety or operational needs but must be approved by the Area Maintenance Superintendent prior to treatment. Areas previously maintained as Zone 1 will be revegetated as time and resources are available. In the interim, noxious weeds will be maintained with a "non-residual" herbicide or by mechanical methods on an as needed basis. Please refer to page 4-5 "Program Goals" for specifics on the three year plan.

1.1.2. Action Thresholds (Zone 1)

An action threshold refers to the point at which action must be taken to control an infestation of weeds. The action thresholds for treatment of zone 1 are listed below and must be approved by the Region Superintendent or their designee prior to treatment:

- Sight distance limited by vegetation at the edge of pavment
- Special safety considerations

1.1.3. Methods (timing and procedures)

Zone 1 residual applications, where required, will occur in the spring, typically beginning in early March. Herbicide Sensitive Areas will be maintained with a chemical that has been approved for use within this 60-foot buffer or by alternative mechanical applications. Special care will be given to these sensitive areas to insure that there are no impacts to the aquatic environment.

1.1.4. Prescriptions

See **Appendix A, Zone 1 Maintenance Prescriptions**

1.2. Hazard Tree Removal

1.2.1. Policy and Practices

Trees within the right-of-way are routinely monitored by maintenance staff. Hazard trees may be:

- Dead
- Diseased
- Leaning or
- Structurally damaged or unsound
- Shading, in some cases trees cause shading and create excessive frost problems on the roadway. In these cases canopy thinning or removal may take place to mitigate the risk.

Trees that are identified as an imminent threat to the highway or traffic will be evaluated using best horticultural judgment and removed as soon as possible.

2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process described in Figure 3 (page 11). The goals of the IVM program are to**:**

- Provide effective control of noxious weeds
- Reduce maintenance life cycle costs
- Establish stable roadsides with desirable vegetation
- Preserve and enhance environmental quality

2.1. Integrated Vegetation Management Planning and Tracking Database

One of the keys to successful use of IVM is carrying out activities in accordance with a long-range plan and to follow up with monitoring and evaluation of treatment results. To facilitate this, IVM forms and a database have been created for statewide use by WSDOT maintenance. This system is being tested as part of the initial development of Roadside Vegetation Management Plans and will be modified and refined as technology in this area continues to develop over the coming years.

2.1.1. Sample forms

A copy of the Integrated Vegetation Management Form and Application Record are included in **Appendix E, Forms and Records**.

2.1.2. Instructions for use

Maintenance supervisors and technicians can access the IVM Record through the existing pesticide application record keeping system available from the area office. The IVM form should be used whenever evaluation of a method or product is desired. Entries should include future evaluation dates as well as a description of the site and current conditions.

2.2. Mowing Operations

2.2.1. Policy and Objectives

Mowing will be accomplished throughout the South Central Region, Area 1 on an as needed basis. Mowing needs and prescriptions will vary by location. Mowing can be an effective form of weed control, but done incorrectly can cause damage to desirable vegetation and enhance the growing environment for unwanted weeds. It's important when conducting a mowing operation to consider a number of factors including goals, timing, target species, deck height and frequency.

2.2.2. Methods (timing and procedures)

Prior to conducting a mowing operation consider the following elements. Review items 1-7 below, then review and follow the appropriate prescriptions in Appendix A. There will be no mowing of desirable vegetation including grass, forbs, shrubs or woody species without prior authorization of the Maintenance Area Superintendent or their designee.

1. **Identify Goals Of Mowing Operation:** Before prescribing mowing as a preferred alternative it is important to clearly understand what the goals of the operation are. These goals should not only be understood by the manager or decision maker, but also must be clearly communicated and understood by the operator as well. Goals may include; control of seed production, maintenance of sight distance, control of vegetation around hardware features, control of noxious or nuisance weeds in an environmental or crop sensitive area or the removal of weed skeletons for the control of newly emerging weeds.

2. **Identify Appropriate Timing:** When mowing in a stand of established dry land perennial grass, particularly native varieties, it is important to consider timing. Mowing shall not occur until after desirable grasses have reached dormancy or set seed, typically in July-August. If the goal is control of weed seed production in an area where no desirable vegetation is present, mowing should take place as late as possible but prior to seed development. This will increase the likelihood that the target plant will not produce seed.

3. **Identify Target:** Identify target plant or plants to be controlled and ensure that the mowing operation will not spread these weed or exacerbate the existing problem. Some weeds, such as Japanese knotweed, can be easily spread through mowing. Ensure that the operator understands the target species and any desirable species in the area.

4. **Deck Height:** The mower deck height must be maintained at least 6-8 inches from the ground to reduce the likelihood of exposing bare soil. It is also important to maintain this deck height if the mowing operation will include desirable grasses. Close mowing may be allowed in special cases where no desirable species occurs and restoration work will immediately follow.

5. **Clean Mower:** Mowing can easily spread weed seed from infested areas to uninfested areas. It is important to clean the mower after each operation to ensure that mowing operation is not contributing to the spread of noxious and nuisance weeds.

6. **Consider Alternatives:** As with all IVM operations it is important to consider alternative methods. Mowing in South Central Region, Area 1 is not a routine maintenance activity. It is a secondary form of weed control to be used on an as needed basis.

7. **Communicate:** Communication with the mower operator is critical to a successful mowing operation. The operator must understand the goals, timing, target species and desirable species before the mowing operation begins**.**

2.2.3. Prescriptions

See **Appendix A, IVM Mowing Prescriptions**

2.3. Noxious Weed Control

2.3.1. Policy and Objectives

WSDOT is required to control and prevent the spread of all noxious weeds on lands owned or managed by the agency. Noxious weed control is a high priority for WSDOT as a result of this legal mandate as well as the fact that if they are left unchecked, levels of infestation can begin to spread at exponential rates from year to year. Noxious weeds are invasive, non-native plant species that can quickly dominate native plant communities and spread to other areas or regions. New infestations of noxious weeds often appear first in highway corridors after being transported from other areas by vehicles or transportation of agricultural products. Without timely control, new infestations can further spread along transportation corridors and to adjacent property. The overall cost and economic impact to the agricultural community and the health of native ecosystems can be significant.

WSDOT prioritizes weed control based on three legally defined weed species classification categories. Chapter 16-750 of the Washington Administrative Code lists weed species in classes A through C. Noxious weeds include all plants listed as class A, and those in classes B and C that are designated for control within each individual county.

Class A

Class A noxious weeds are non-native species with a limited distribution in the state. Immediate treatment of these new infestations is required by State law and is the top weed control priority to prevent spread into adjacent areas. South Central Region, Area 1 is located primarily within Noxious Weed Regions 3and 6.
http://www.nwcb.wa.gov/weed_list/weed_regions.htm

Currently there are no known Class A weeds identified within the WSDOT operating right of way in South Central Region, Area 1.

Class B

Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. Containment, gradual reduction, and prevention of further spread are the chief management concerns of Class B species.
Class B noxious weeds designated for control within Adams, Spokane, Whitman and Franklin Counties and currently present within WSDOT right-of-way include:

Kittitas County:

- Annual Bugloss, (Anchusa arvensis)
- Common Bugloss (Anchusa officinalis)
- Common Catsear, (Hypochaeris radicata)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Diffuse Knapweed, (centaurea diffusa)
- Giant Knotweed, (Polygonum polystachyum)
- Hoary Alyssum, (Berteroa incana)

- Houndstongue, (Cynoglossum officinale)
- Japanese Knotweed, (Polygonum cuspidatum)
- Kochia, (Kochia scoparia)
- Longspine Sandbur, (Cenchrus longispinus)
- Meadow Knapweed, (*Centaurea jacea x nigra*)
- Musk Thistle, (*Carduus nutans*)
- Oxeye Daisy, (Leucanthemum vulgare)
- Orange Hawkweed, Hieracium aurantiacum)
- Purple Loosestrife, (*Lythrum salicaria*)
- Perennial Pepperweed, (*Lepidium latifolium*)
- Perennial Sowthistle, (*Sonchus arvensis ssp. Arvensis*)
- Puncturevine, (*Tribulus terrestris*)
- Rush Skeletonweed, (*Chondrilla juncea*)
- Russian Knapweed, (Acroptilon repens)
- Spotted Knapweed, (*Centaurea biebersteinii*)
- Sulfur Cinquefoil, (Potentilla recta)
- Scotch Thistle, (*Onopordum acanthium*)
- Scotch Broom (Cytisus scoparius)
- Tansy Ragwort, (Senecio jacobaea)
- Wild Carrot, (Daucus carota)
- Yellow Starthistle, (*Centaurea solstitialis*)

King County

- Annual Bugloss, (Anchusa arvensis)
- Common Bugloss (Anchusa officinalis)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Diffuse Knapweed, (centaurea diffusa)
- Kochia, (Kochia scoparia)
- Leafy Spurge, (Euphorbia esula)
- Meadow Knapweed, (*Centaurea jacea x nigra*)
- Orange Hawkweed, Hieracium aurantiacum)
- Perennial Pepperweed, (*Lepidium latifolium*)
- Perennial Sowthistle, (*Sonchus arvensis ssp. Arvensis*)
- Purple Loosestrife, (*Lythrum salicaria*)
- Russian Knapweed, (Acroptilon repens)
- Rush Skeletonweed (*Chondrilla juncea*)
- Scotch Thistle, (*Onopordum acanthium*)
- Spotted Knapweed, (*Centaurea biebersteinii*)
- Puncturevine (*Tribulus terrestris*)
- Yellow Starthistle (*Centaurea solstitialis*)

Class C

Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. Counties may require control of certain Class C weeds at their own discretion. Unless otherwise required, WSDOT classifies most Class C species as “nuisance” weeds and provides control as part of the general roadside vegetation management program. Nuisance weeds and treatment options are described in Section 2.4 of this document.

Class C noxious weeds designated for control within Adams, Spokane and Whitman counties, and are currently present within WSDOT right-of-way include:

Kittitas County:

- Canada Thistle (*Cirsium arvense*)
- Cereal Rye (Secale cereale)

King County

- Canada Thistle (*Cirsium arvense*)
- Hoary Cress, (Cardaria draba)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Babys Breath (*Gypsophila paniculata*)
- Field Bindweed (Convulvulus arvensis)
- Poison Hemlock (*Conium maculatum*)
- Hairy Whitetop (Cardaria pubescens)

2.3.2. Methods

Control of noxious weed species can be very difficult; therefore it is important to incorporate the concepts of IVM. Regardless of the specific method used to control noxious weeds, it is important to fully understand the life cycle of the weeds that are being controlled.

- Chemical: In many cases herbicides are used as a means of early control due to levels of infestations and area requiring control. Timing of herbicide treatments within the growth stage of the weed species is critical to achieving complete control of perennial species.
- Mechanical: Mowing, blading, disking and hand pulling are often used in conjunction with other control methods. Mowing considerations are coved in section 2.2 of this document.
- Biological: Biological controls are being used widely throughout WSDOT within the operating right of way. It is important to consider climate, level of infestation and available control species when selecting an appropriate biological control. It is also imperative that biocontrols be placed in an area that won't be adversely effected by mechanical or chemical control methods.
- Revegetation/Enhancement: A variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. Documentation of these methods and related success is essential to the success of long-term control measures. IVM forms will be completed for each of these sites and are located in Appendix E.

2.3.3. Action Thresholds

The action threshold for noxious weed control is met whenever seed production of a noxious weed is imminent. WSDOT is required by state law to control and prevent the spread of all noxious weeds on WSDOT right-of-way (RCW 17.10.040). Control efforts will be initiated prior to the noxious weed producing seed.

2.3.4. Prescriptions

See **Appendix A, IVM Prescriptions, Noxious Weed Control**

2.3.5. Species Location

See **Appendix C, Noxious Weed Locations, Table 2.2**.

2.4. Nuisance Weed Control

2.4.1. Policy and objective

Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside including:

- Stabilization of shoulders and banks
- Improved storm water treatment
- Protection and enhancement of native plant communities
- Reduces spread of weeds
- Enhances visual quality

Depending on crew availability and budget, nuisance weeds will be controlled throughout the roadsides of South Central Region, Area 1 as part of the overall Integrated Vegetation Management process. Priority control measures will be given to new infestations or those infestations that threaten desirable roadside vegetation. In some cases, where practical, nuisance weed infestations may be treated in conjunction with of noxious weed.

For established infestations currently identified in this plan, weed populations will be contained and gradually reduced by applying appropriate vegetation management prescriptions as funds and resources are available. Control options range from manual cutting, mechanical removal, revegetation and biological control, to targeted selective herbicide application, or combinations thereof.

2.4.2. List of species currently present

Numerous nuisance weeds occur throughout South Central Region, Area 1 within WSDOT right of way that are not targeted for control. In some cases they are controlled incidentally or for site-specific reasons.

Common nuisance weed species that occur on WSDOT right of way within South Central Region, Area 1 include:

- Babys Breath (*Gypsophila paniculata*)
- Cereal Rye (Secale cereale)
- Common Mullen (*Verbascum thapus*)
- China Lettuce (*Lactuca serriola*)
- Marestail (*Conyza canadensis*)
- Mustard Species
- Russian Thistle (*Salsola iberica sennen*)
- Teasel (Dipsacus sylvestris)
- Scotch Broom (Cytisus scoparius)

2.4.3. Methods

Control measures for nuisance weeds are very similar to those of noxious weeds, see Section 2.3.2 and are dependent on available resources. Species that are wide spread are treated routinely throughout the season, often controlled incidental to noxious weeds.

2.4.4. Action Threshold For Nuisance Weed Control

Action will be taken at the discretion of the area superintendent. WSDOT is not required to control nuisance weeds, however, action is advised where funding is available and one or more of the following instances occur as a result of a nuisance weed infestation.

- Impact to adjacent land owners
- Impact to desirable vegetation
- Nuisance weed presence reduces effectiveness of noxious weed control due to height or density
- New infestation where local control is achievable

2.4.5. Prescriptions

See **Appendix A, IVM Prescriptions, Nuisance Weed Control**

2.4.6. Species Location

See **Appendix C, Nuisance Weed Locations, Table 2.4**.

2.5. Tree and Brush Control

2.5.1. Policy and Practice

Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.

- Native large shrub and small tree species should be allowed to grow and mature in Zone 2 and 3 and side trimmed if they encroach on site distance or other traffic operational requirements.
- Large coniferous or deciduous tree species such as Douglas fir, bigleaf maple, alder, or cottonwood left to grow in Zone 2, can reach substantial size over a relatively short period of time and should be removed when young.

2.5.2. Methods

Removal of undesirable tree and brush species is accomplished in a variety of manners including hand cutting, herbicide applications, hand pulling, mowing or combinations thereof. A thorough understanding of the species to be controlled and consideration of proper timing is important with any of these control methods to reduce damage, minimize visual impact and be cost effective. Below are specific considerations for the various control methods:

- Mowing: In many cases it is effective to mow back the majority of the existing vegetation to the out side edge of zone 2, then follow with spot mowing or herbicide treatments of undesirable species as needed, leaving desirable species to form a competitive cover.
- Hand Cutting: When possible, hand cuttings can be chipped in place and applied to the roadside as mulch where needed. In many cases this can be used to improve soils, reduce erosion and improve vegetation.
- Timing: Consideration should be given to the visual impact of trimming as well as effectiveness of the operation. Chemical control will not be used on deciduous trees and shrubs until after the first of September, except for cut stump treatments.
- Chemical Control: Chemical control will not be used on conifers greater than 2’ in height.

- Transplanting: Whenever possible, safe and practical, seedling trees will be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be signed to allow private citizens or groups to collect seedlings for use as transplants.
- Prescriptions: See **Appendix A**, IVM Prescriptions, Tree and Brush Control.

3. SPECIAL MAINTENANCE AREAS

Special Maintenance Areas include any sections of roadside where there are unique maintenance requirements or existing arrangements with any external organizations. Special Maintenance Areas include highways passing through the Wenatchee National Forest, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state parks, wellheads, environmentally sensitive areas, school zones, roadsides adjacent to individual properties with current or annual no-spray agreements and new technologies.

3.1. Herbicide Sensitive Areas

3.1.1. Policy and objectives

There are a number of herbicide sensitive areas located within the region where herbicide use will be limited to reduce potential risk to the environment. Herbicide applications made for noxious or nuisance weed control, maintenance of vegetation at the pavement edge, or applications made in combination with mechanical methods for control of undesirable trees will be made in accordance with the court order "Washington Toxics Coalition vs. EPA" http://agr.wa.gov/PestFert/EnvResources/Buffers.htm#maps

The Washington State Department of Agriculture maintains a list of individuals who have been diagnosed with Multiple Chemical Sensitivity (MCS). WSDOT is required by law to notify these individuals when making herbicide applications to roadside locations if the highway right of way is adjacent to their property and their principle residence is within one-half mile of the application. Concerned individuals can obtain further information by contacting the area maintenance office in Cle Elum at 509.577.1908.

3.2. U.S. Forest Service Easement

3.2.1. Policy and Procedures

In some locations, Interstates and State Routs are operated by WSDOT under easement from the U. S. Forest Service. This arrangement is governed by a Memorandum of Understanding between the two agencies. Road sections operated or partially operated under easement from the USFS include:

- I-90 MP. 34 and 71 East and Westbound
- SR 903
- SR 906

In accordance with this agreement WSDOT provides annual notification to the U.S. Forest Service, Cle Elum Ranger District of proposed weed control operations. This notification is typically provided in the spring of each year and followed up every two years to discuss the overall weed control program.

3.3. Restoration Projects and Test Plots

3.3.1. Policy and objectives

Test plots are established as part of an on-going effort to refine the Integrated Vegetation Management process. Test plots will be used to evaluate revegetation techniques, herbicide selection, species selection, evaluate soil amendments and other research activities as needed. Test plot goals, locations and duration are identified and recorded in **Appendix D**.

3.3.2. Locations by Milepost, See Appendix D, Test and Restoration Plots

3.4. Adopt-a-Highway and Owner Will Maintain Agreements

3.4.1. Policy and objectives

The Adopt-a-Highway program allows private citizens, volunteer groups, and businesses an opportunity to contribute to an enhanced roadside appearance through direct partnership with WSDOT. The program improves the overall appearance of the roadside primarily through litter control, although other activities that improve the visual and environmental condition of the roadside are permitted as well including limited planting and maintenance of specific areas. Other partnership opportunities are possible through general permits and agreements. Volunteer groups that do enhancement planting on WSDOT roadsides are typically required to establish and maintain the plantings. Communities may partner with WSDOT to develop and maintain selected Community Enhancement Areas as described in the Roadside Classification Plan.

Neighboring property owners may enter into an agreement with WSDOT where they take responsibility for the vegetation management activities along the area where their property abuts state right-of-way. These “owner will maintain” agreements are established through a General Permit and are required to be renewed on an annual basis. These agreements are typically implemented in cases where a neighboring property owner desires a higher level of care in front of their business or residence, or prefers maintaining the area to avoid WSDOT herbicide applications near their home or business.

3.4.2. Locations by Milepost

Locations where partnership agreements exist for accomplishment of roadside maintenance are listed in **Appendix D, Special Maintenance Areas, Table 3.0**.

3.5. Environmentally Sensitive Areas

3.5.1. Policy and Objectives

As a state agency, WSDOT is committed to conducting its activities in accordance with the dictates of sound environmental protection practices. This includes pollution prevention, avoid, minimize and appropriately mitigate adverse environmental impacts, and to comply with all environmental laws and regulations applicable to our business and activities.

Numerous environmentally sensitive areas occur within South Central Region, Area 1, such as lakes, streams and wetlands. Special care will be taken to avoid and minimize impacts to these resources. Herbicide applications in these areas

will follow normal label requirements. Other IVM treatments that take place in these areas, such as mowing or revegetation efforts will be subject to the Regional Road Maintenance Endangered Species Act Program Guidelines.

In compliance with the Regional Road Maintenance Endangered Species Act Program Guidelines, as agreed upon with the National Marine Fisheries Service, WSDOT has identified, mapped and located in the field all highway sections within 300 feet of rivers, wetlands and water bodies.

3.5.2. Locations

Environmentally sensitive areas are identified in the field with green guideposts and identified in an area atlas. For more information on the Regional Road Maintenance ESA Program Guidelines refer to: http://www.wsdot.wa.gov/maintenance/roadside/esa.htm or contact Sandy Stephens at 360.705.7853.

3.6. Storm Water Management Facilities

3.6.1. Policies and Objectives

Storm water management facilities include bio-filtration, swales, retention ponds and infiltration ponds.

Storm water management facilities will be managed for noxious and nuisance weeds following the same guidelines mentioned in previous sections. The primary objectives, with regard to vegetation management within these facilities, are to maintain retention and detention functions to improve water quality.

3.6.2. Methods

Noxious weed control will be conducted at all storm water management facilities as necessary. Control of nuisance weeds will be coordinated with nuisance weed control along the adjacent roadside. Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed. Inlets and outfalls should be kept clear of unwanted vegetation and debris as well.

Refer to vegetation management prescriptions for specific weed, tree and brush species in Sections 1 and 2 of this document for timing and control methods.

Currently there are no active storm water management facilities in South Central Region, Area 1.

3.7. Wetland Mitigation Sites

3.7.1. Policy and Objectives

Wetland mitigation results from unavoidable impacts to naturally occurring wetlands from highway construction. In these cases new wetlands are created on WSDOT right of way and vegetation is managed to provide environmental functions similar to those eliminated in other areas by the highway's presence.

Wetland mitigation sites are carefully monitored for up to 10 years following their creation to ensure compliance with environmental regulation. In most cases vegetation in these sites is planted and established through the construction

process so the maintenance actions are not required unless noxious weeds or hazardous trees become an issue. However, it is important that maintenance be aware of the locations of wetland mitigation sites to avoid impacting the required environmental functions of the sites.

3.7.2. Locations by Milepost

See **Appendix D, Special Maintenance Areas, Table 3.0**

Routine Maintenance Activities

Zone 1 Maintenance - *Annual maintenance (Option A)*

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
gravel shoulder or guardrail sections	4' vegetation free zone	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	non-selective residual herbicide Payload @ 8 ozd Oust/SFM 75 @ 3 ozd	Fall and/or Spring	none required

SC Region Area 1 - IVM Prescriptions

Noxious Weed Control

Noxious Weed Control - **Kochia** (A)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Shortly after emergence	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Escalade @ 48 ozl Spreader 90 @ 32 ozl	Early growing season first/second flush	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Kochia*** *(Mechanical Control) (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Mature Plant before seed development	Reduce seed production listed noxious weeds.	mow	Mower	None	Late fall	Repeat as necessary

Noxious Weed Control - **Purple Loostrife**

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Establishment of small plant community	Reduce/control of host plant.	Biological	None	Galerucella calmariensis	Late spring or	Reapply as necessary.

Noxious Weed Control - ***Dalmatian Toadflax*** *(Biological Control) (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	Macinus Jenthus	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - **Dalmatian Toadflax** - (B)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 32 ozl Escort 1 ozd Spreader 90 @ 32 ozl	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - **Dalmatian Toadflax** - (C)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Amine 4/Platoon 32 ozl Telar @ 2 ozd Vanquish @ 32 ozl MSO @ 32 ozl	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - ***Rush Skelotenweed*** *- Rosette Stage (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 32 ozl Spreader 90 @ 32 ozl	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control

Noxious Weed Control - ***Rush Skelotenweed*** *- Bolting/Flowering Stage (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 64ozl Spreader 90 @ 32 ozl	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Canada Thistle*** *- Rosette Stage (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.		labor, transportation	Amine 4 @ 16 ozl. and Round-up @16 ozl. Spreader 90 @ 16 ozl	Early growing season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Canada Thistle*** *- Bolting/Flowering Stage (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.		labor, transportation	Escalade @ 48 ozl Spreader 90 @ 32 ozl	Early growing season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***(Backpack) Canada Thistle (C)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	after seed set	eradication	cut and bag seed heads spot treatment of plants	scissors / loppers backpack sprayer	Glyphosate @ 3.2 ozl/gallon Spreader 90 @ 1 ozl/gallon	after seed set	monitor results in spring

Noxious Weed Control - **Scotch Thistle** (Mechanical) (A) with herbicide

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	2' to 6'	eradication	dig up plant	shovel	N/A	all season	monitor for reemergence

Noxious Weed Control - **Scotch Thistle** (B) with herbicide

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment with herbicide	Backpack sprayer	Escalade @ 48 ozl Spreader 90 @ 1 ozl/gallon	Early/Mid season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Broadleaf in Reseeded Areas*** *- Under 2" (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Band application	tank sprayer	Buctril @ 20 oz or generic equivalent Spreader 90 @ 32 ozl	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Broadleaves in Reseeded Areas*** *- Over 2" (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	Band application	tank sprayer	Buctril @ 20 ozl Vista @ 12 ozl Spreader 90 @ 32 ozl	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control

Noxious Weed Control - ***Diffuse Knapweed*** *(Biological Control) (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	flowering	Reduce/control host plant	Biological	None	Larinus minutus	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - ***Knapweeds*** *- Rosette Stage (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, tank sprayer.	Transline @ 16 ozl. Spreader 90 @ 32 ozl.	Early Season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Knapweeds*** *- Bolting/Flowering Stage (C)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, tank sprayer	Platoon @ 128 ozl. Telar XP @ 1 ozd. Spreader 90 @ 32 ozl.	Early Season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Yellow Starthistle*** *(Biological Control) (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	Eustenopus villosus	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - ***Yellow starthistle*** *- At Rosette Stage (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, tank sprayer	Tordon 22k @ 32 ozl Spreader 90 @ 32 ozl	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control ***- Yellow starthistle -*** *At Bolting/Flowering Stage (C)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, tank sprayer.	Tordon 22k @ 64ozl Spreader 90 @ 32 ozl	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control ***- Scotch Broom -*** *(A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	tank sprayer	Garlon 3A @ 128 ozl Amine 4/Platoon @ 64 ozl Phase @ 16 ozl	Early Season	Repeat as necessary. Seed and fertilize to

Tree and Brush Control

Tree and Brush Control - *Alder, Maple, Cottonwood (trees under 6' ht.)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	selective foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Garlon 3A w/ Redi-vert at label rate. Krenite S on alder at label rates	late fall to avoid brown out	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Tree and Brush Control - *Alder, Maple, Cottonwood (trees over 6' ht.)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2	whenever trees are likely or have potential to grow and fall on the highway	control of young trees that may impact roadside function if allowed to grow.	hand cutting, treatment of cut surface w/ herbicide chip debris in zone 2	power saws, loppers, chipper, backpack or hand-held sprayer	Garlon 4 at label rate for cut-stump treatment	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Tree and Brush Control - *Conifers (trees under 2' ht.)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 1 or 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	foliar treatment w/ herbicide	tank sprayer where possible, backpack sprayer where necessary	Garlon 4, Escort, or Krenite S at labeled rates apply w/ Redi-vert when possible	mid summer when new growth is present	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Tree and Brush Control - *Conifers (trees under 2' ht.)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 1 or 2	as soon as seedlings become visible w/in 30' of fog line (no guardrail present)	control of seedling trees that may impact roadside function if allowed to grow.	hand pulling transplant if possible	Weed Wrench optional	Mechanical	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Tree and Brush Control - *Conifers (trees over 2' ht.)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2 or 3	whenever tree has been identified as defective or likely to fall on the highway	control of trees that may impact roadside function if allowed to grow.	hand cutting chip debris in zone 2 if necessary	power saws, chipper,	Mechanical	anytime	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (A*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Veteran 720 @ 64 Ozl Escort @ .5 Ozd	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (B*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Veteran 720 @ 64 Ozl	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (C*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Curtail @64 Ozl Escort @ .5 Ozd	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (D*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Tordon 22K @ 16 ozl Escort XP @ .5 ozd	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (E*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Transline @ 16 ozd Escort XD @ 1 ozd	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Nuisance Weed Control - *Mustard Species, Mullen, Teasel, China Lettuce and other Nuisance species (F*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	When infestation impacts private, public resources (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	Roundup-Pro @ 64 ozd	prior to seed	Reapply as necessary. Seed and fertilize to reduce weed competition See Appendix B

Mowing Prescriptions

Note: Mowing should be accomplished to meet specific goals and objectives specified in the "Management Goal" section below.

Zone 2 Maintenance - Weed seed Control

Location Type	Management Goals	Method	Equipment	Timing	Planning and Follow-up
As needed in Zone 2 or 3	1) Limit noxious weed seed production 2) Improve roadside vegetation 3) Control of annual weeds 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late in the growth cycle of the target plant species but prior to seed development. This will limit regrowth and potential seed production.	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed

Zone 2 Maintenance - Crop/Sensitive Area

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 2 or 3	1) Limit noxious weed seed production 2) Improve roadside vegetation 3) Control of annual weeds 4) eliminate potential risk of herbicide application. 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late in the growth cycle of the target plant species but prior to seed development. This will limit regrowth and potential seed production.	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed

Zone 2 Maintenance-Safety/Sight Distance

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in zone 1, 2 or 3	1) Improve sight distance for safety 2) Incidental control of annual noxious weeds 3) Incidental control of seed production 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place as late in the growing season as possible while still maintaining good sight distance	1) Communicate goals with operator prior to undertaking operation 2) Monitor area for regrowth and adequate sight distance 3) re-mow as necessary to provide safe sight distance

Zone 2 Maintenance- Remove Overstory (old weed debris)

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 2 or 3	1) Remove old vegetation debris in order to control emerging weeds 2) Remove old vegetation debris that may be restricting desirable grasses 3) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late fall/winter after grass is dormant	1) Communicate goals with operator prior to undertaking operation

Zone 2 Maintenance- New Seeding

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 1, 2 or 3	(1 Reduce weed pressure (2 Improve roadside vegetation (3 Eliminate weed seed source	Mow single pass maintaining deck height above desirable grass	mower, attenuator	Prior to seed set of weed species or when needed to reduce competition with desirable species	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled

Planting Area A

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

Planting Prescriptions

Seed Mix 1 ***(West Side)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Western Mannagrass *Glyceria occidentalis*	6.07
Alpine Timothy Phleum alpinum	1.54
Romers Fescue *Festuca*	2.81
Blue Wildrye "Middle Fork John Day" *Elymus glaucus*	5.67
Tufted Hairgrass *Deschampsia caespitosa*	0.35
Mountain Brome "Trout Lake" *Bromus marginatus*	6.87
Total Lbs PLS/Acre	**23.31**

Planting Prescriptions

Optional Species

Grass Species

Optional Shrubs and Forbs Species

Planting Area B

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

Planting Prescriptions

Seed Mix 1 ***(Hyak Vicinity)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Mountain Brome "Trout Lake" *Bromus marginatus*	12.35
Blue Wildrye "Middle Fork John Day" *Elymus glaucus*	5.17
Idaho Fescue "Winchester" *Festuca idahoensis*	0.43
Tufted Hairgrass *Deschampsia caespitosa*	0.01
Creeping Red Fescue *Festuca rubra*	0.03
Total Lbs PLS/Acre	**17.99**

Optional Species
Grass Species
Optional Shrubs and Forbs Species

Planting Area C

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

Planting Prescriptions

Seed Mix 1 ***(Easton Vicinity)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Mountain Brome "Trout Lake" *Bromus marginatus*	11.37
Blue Wildrye "Middle Fork John Day" *Elymus glaucus*	4.09
Idaho Fescue "Winchester" *Festuca idahoensis*	0.44
Bluebunch Wheatgrass Anatone/Goldar *Pseudoroegneria spicata*	1.26
Crested Wheatgrass "Douglas" *Agropyron cristatum*	0.85
Total Lbs PLS/Acre	**18.01**

Optional Species
Grass Species
Optional Shrubs and Forb Species

Planting Area D

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

Planting Prescriptions

Seed Mix 1 ***(Easton to CleElum)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Bluebunch Wheatgrass "Wahluke" (*Pseudoroegneria spicata*)	10.63
Sandberg Bluegrass "Hanford" (*Poa sandbergii*)	0.41
Thickspike Wheatgrass "Schwindemar" *(Agropyron trachycaulum)*	4.64
Sand dropseed (*Sporobolus cryptandrus)*	0.03
Total Lbs PLS/Acre	**15.71**

Optional Species
Grass Species Basin Wildrye *(Elymus cinereus)* Needle and Thread Grass *(Achillea millefolium)* Indian Ricegrass "Nezpar" *(Oryzopsis hymenoides)* **Optional Shrubs and Forb Species** Rubber Rabbitbrush *(Chrysothamnus nauseosus)* Basin Big Sage *(Artemesia tridentata)* Snowy Buckwheat *(Eriogonum niveum)* Yarrow *(Achillea millefolium)* Arrow-leaf Balsamroot *(Balsamorhiza sagittata)*

Planting Area E

Note: Seed mixes are listed as Pounds Live Seed for drill seeding

Planting Prescriptions

Seed Mix 1 ***(Indian John Hill)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Bluebunch Wheatgrass "Anatone" *(Pseudoroegneria spicata)*	3.50
Bluebunch Wheatgrass "Witmar" *(Pseudoroegneria spicata)*	3.50
Sandberg Bluegrass "Wallowa or Canbar" (Poa sandbergii)	0.50
Crested Wheatgrass "Douglas" (Agropyron cristatum)	1.5
Idaho Fescue "Winchester or LeGrande" *(Festuca Idahoensis)*	3.50
Mt. Brome "Trout Lake" (*Bromus carinatus)*	2.00
Blue Wildrye "MFJD or Tucannon" Elymus glaucus	1.50
Total Lbs PLS/Acre	**16.00**

Optional Species
Grass Species Basin Wildrye *(Elymus cinereus)* Needle and Thread Grass *(Achillea millefolium)* Indian Ricegrass "Nezpar" *(Oryzopsis hymenoides)* **Optional Shrubs and Forb Species** Rubber Rabbitbrush *(Chrysothamnus nauseosus)* Basin Big Sage *(Artemesia tridentata)* Snowy Buckwheat *(Eriogonum niveum)* Yarrow *(Achillea millefolium)* Arrow-leaf Balsamroot *(Balsamorhiza sagittata)*

Planting Area F

Note: Seed mixes are listed as Pounds Live Seed not bulk rate.

Planting Prescriptions

Seed Mix 1 ***(Ellensburg Vicinity)***

Seed Mix Description: This is a general roadside seed mix for the George Vicinity. Additional species may be appropriate for this area depending on planting location in relation to the roadway, soil type, and management goals.

Grass Species	Pounds Pure Live Seed (PLS) Per Acre
Bluebunch Wheatgrass "Wahluke" *(Pseudoroegneria spicata*)	7.50
Sandberg Bluegrass "Hanford" (*Poa sandbergii*)	1.20
Thickspike Wheatgrass "Schwindemar" *(Agropyron trachycaulum)*	5.00
Siberian Wheatgrass *"vavilov"* (Agropyron fragile spp sibericum)	1.10
Crested Wheatgrass *"Nordan"* (Agropyron dersertorum)	1.10
Sand dropseed (*Sporobolus cryptandrus)*	0.10
Total Lbs PLS/Acre for Drill Seeding	**16.00**

Optional Species
Grass Species Basin Wildrye *(Elymus cinereus)* Needle and Thread Grass *(Achillea millefolium)* Indian Ricegrass "Nezpar" *(Oryzopsis hymenoides)* **Optional Shrubs and Forb Species** Rubber Rabbitbrush *(Chrysothamnus nauseosus)* Basin Big Sage *(Artemesia tridentata)* Snowy Buckwheat *(Eriogonum niveum)* Yarrow *(Achillea millefolium)* Arrow-leaf Balsamroot *(Balsamorhiza sagittata)*

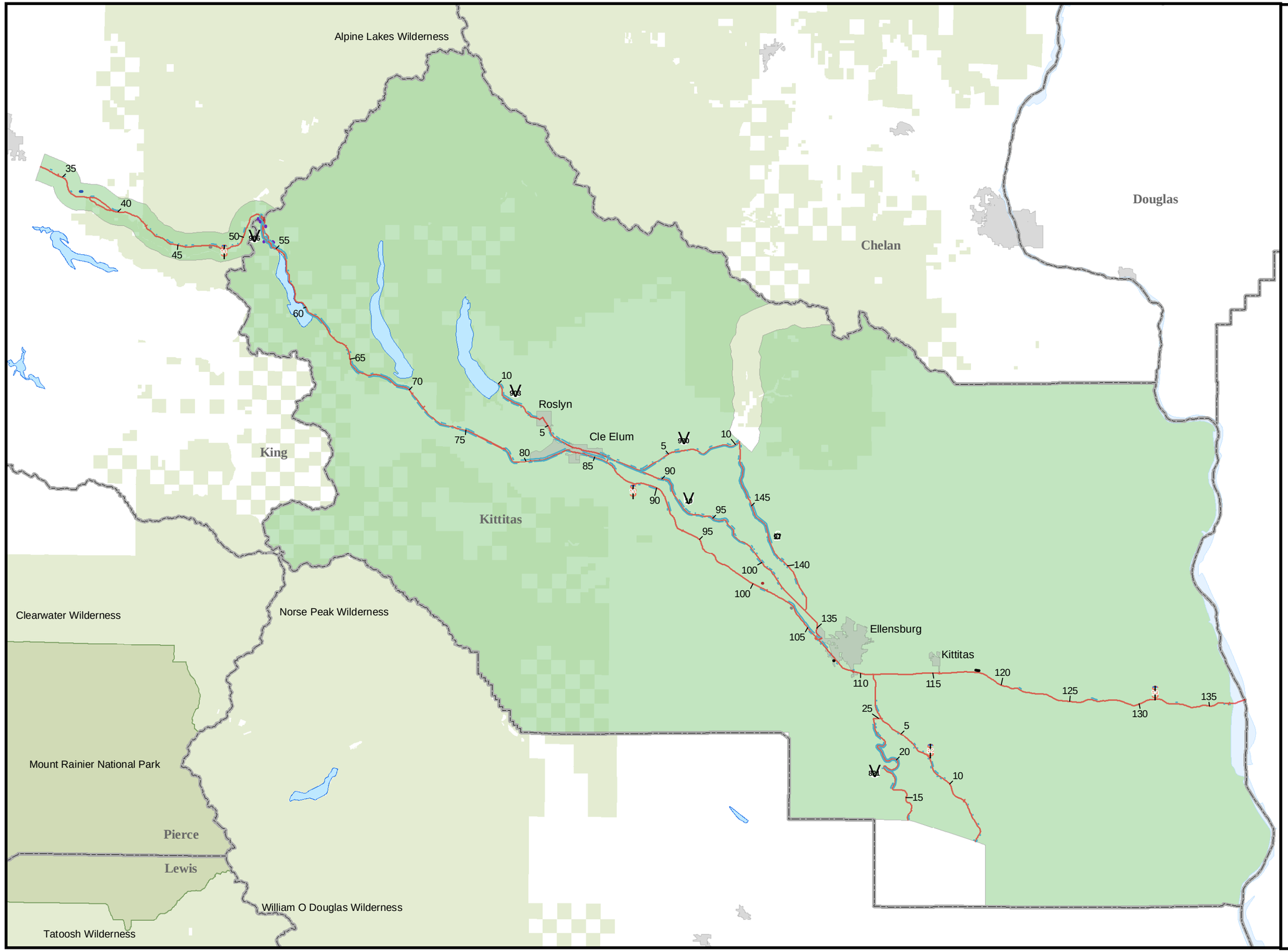
Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:

1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	***Product Name(s)***	***Where Used***	***How/Why Used***	***Notes/Recommendations***	***Restrictions***	***Cautions***
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Bromacil	Krovar 1 DF Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Krovar and Hyvar are premixed with diuron	Westside - Restricted for use Eastside - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on Canadian thistle and horsetail. Landmark is premixed with Oust.	None	None
Clopyralid	Transline Curtail Pathfinder	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr	Curtail and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dicamba	Vanquish Veteran 720	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Vanquish is the dicamba formulation without 2,4-D	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Highly effective for pre-emergent control of unwanted weeds in ornamentals	Restricted for use within 60' of all water	Dichlobenil is highly toxic to aquatic insects
Diflufenzopyr	Overdrive	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Diuron 4 L Diuron 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Cost effective weed control for Zone 1 in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish.
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Second year of use in zone 1, still evaluating	Restricted for use within 60' of all salt water	Highly toxic to estuarine invertebrates
Fluroxypyr	Vista	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	Highly toxic to Eastern Oyster, high surface runoff potential
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	Effective broadleaf tree control without visual impacts	None	None
Glyphosate	Roundup Pro Razor Pro Buccaneer Aquaneat Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective control of all vegetation	Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.	None	None
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases	None	High surface runoff potential, potentially mobile in soil if rain is possible.
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Ronstar	Restricted for use within 60' of all water	High surface runoff potential
Metsulfuron-methyl	Escort XP Metsulfuron Methyl 60 DF	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	Good Zone 1 product but may be difficult to keep in suspension	Restricted for use within 60' of all water	High surface runoff potential
Oryzalin	Oryzalin A.S. Surflan A.S	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Product requires additional rinsing to thoroughly remove residues from empty container	Restricted for use within 60' of all water	Highly toxic to fish
Oxadiazon	Ronstar G Ronstar WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Gallery	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Highly toxic to fish
Pendimethalin	Pendulum 2G Pendulum Aqua	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish, high potential for loss on eroded soil
Picloram	Tordon	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Highly effective for conifer and broadleaf weed control in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly mobile in soil and readily adsorbed through roots of desirable trees
Pyraflufen	Edict	Noxious and nuisance weed control, Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Effective with Roundup for Kochia control	Restricted for use within 60' of all water	Irreversible eye damage, highly toxic to Rainbow Trout
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	New product available for use in 2006	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Zone 1	Nonselective pre/post emergent grass and weed control	Landmark is premixed with Telar	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Triclopyr Amine	Garlon 3A	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	None	None	Irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for invert applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish

Appendix C:
South Central Region Area 1
Noxious Weed Locations
Map 1 of 2



Legend

- Absinth Wormwood
- Common Hawkweed
- Houndstongue
- Musk Thistle
- Orange Hawkweed
- Phragmites
- Purple Loosestrife
- Knapweed
- State Routes
- 75 Mile Post Markers
- County Boundaries
- Major Lakes
- Coast
- SC Region area 1
- City Limits
- National Forest
- National Park

0 5
Miles

Washington State Department of Transportation

October 2006

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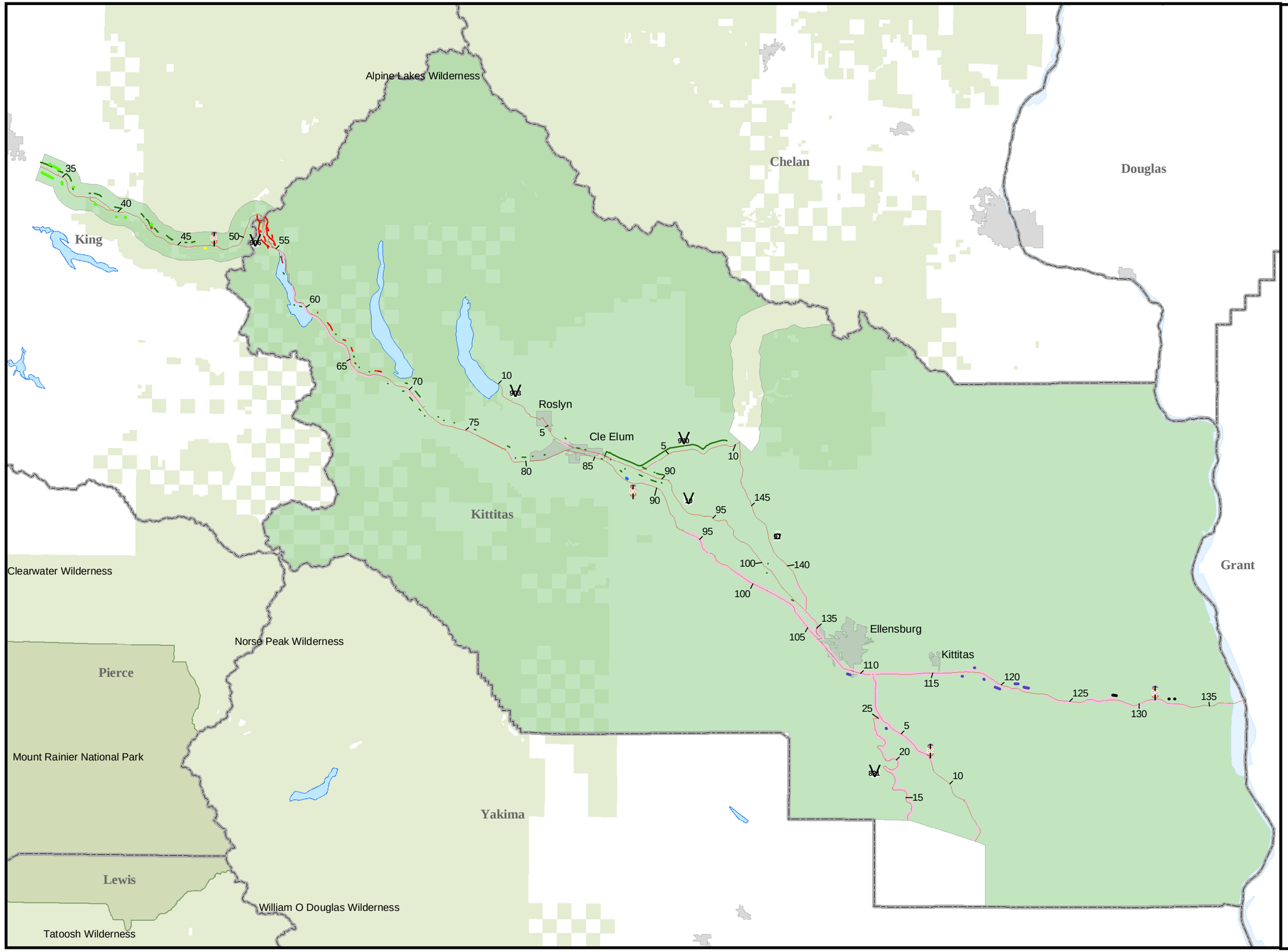
Appendix C:
South Central Region Area 1
Noxious Weed Locations
Map 2 of 2



Legend

- Oxeye Daisy
- Perennial Pepperweed
- Russian Knapweed
- Scotch Broom
- Scotch Thistle
- Sulpher Cinquefoil
- Tansy Ragwort
- Kochia
- Dalmation Toadflax
- State Routes
- 75 Mile Post Markers
- County Boundaries
- Major Lakes
- Coast
- SC Region area 1
- City Limits
- National Forest
- National Park

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Miles

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October 2006

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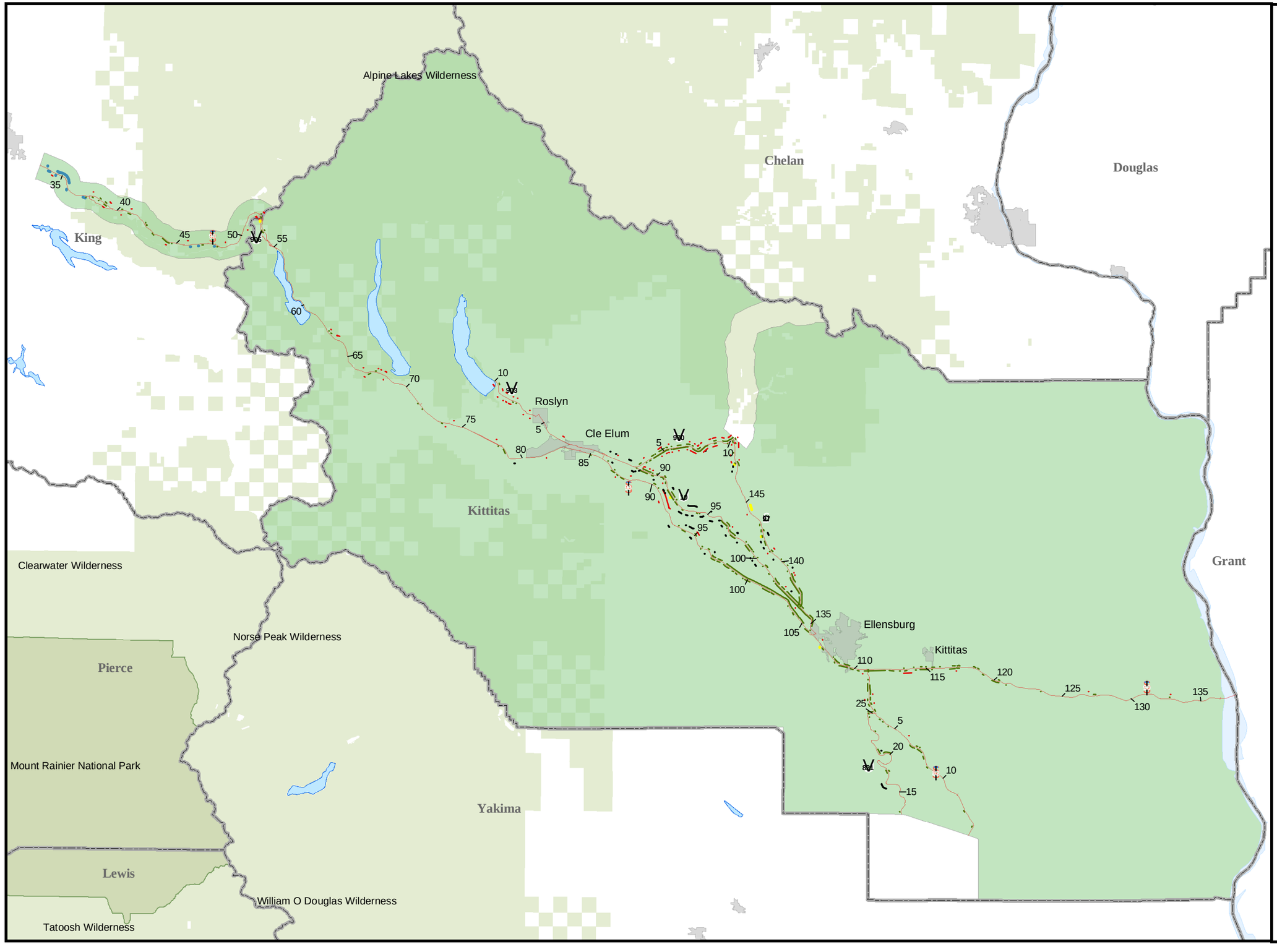
Appendix C:
South Central Region Area 1
Nuisance Weed Locations
Map 1 of 3



Legend

- Absinth Wormwood
- Babysbreath
- Blackberry
- Bull Thistle
- Canada Thistle
- State Routes
- 75 Mile Post Markers
- County Boundaries
- Major Lakes
- Coast
- SC Region area 1
- City Limits
- National Forest
- National Park

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Miles

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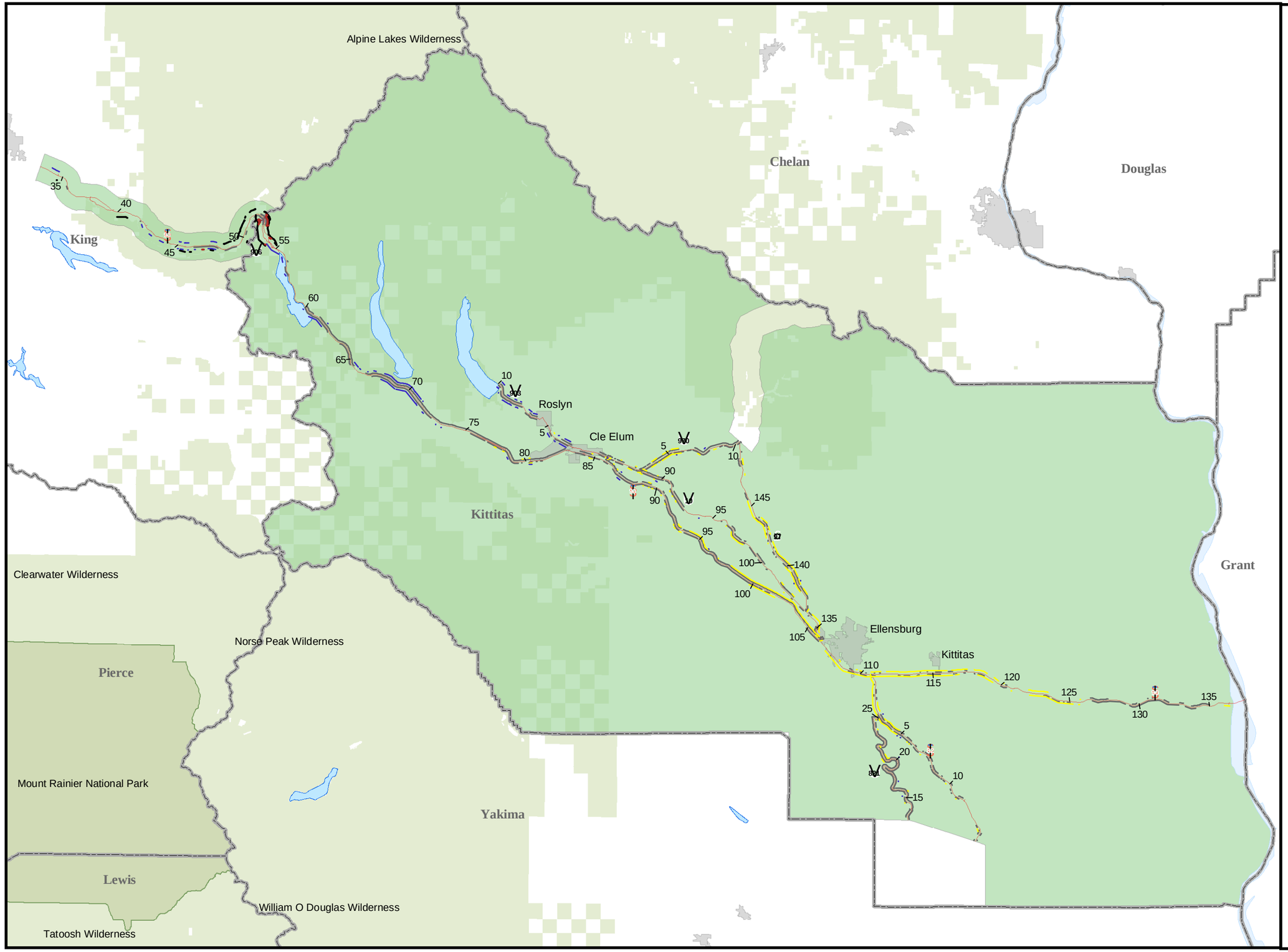
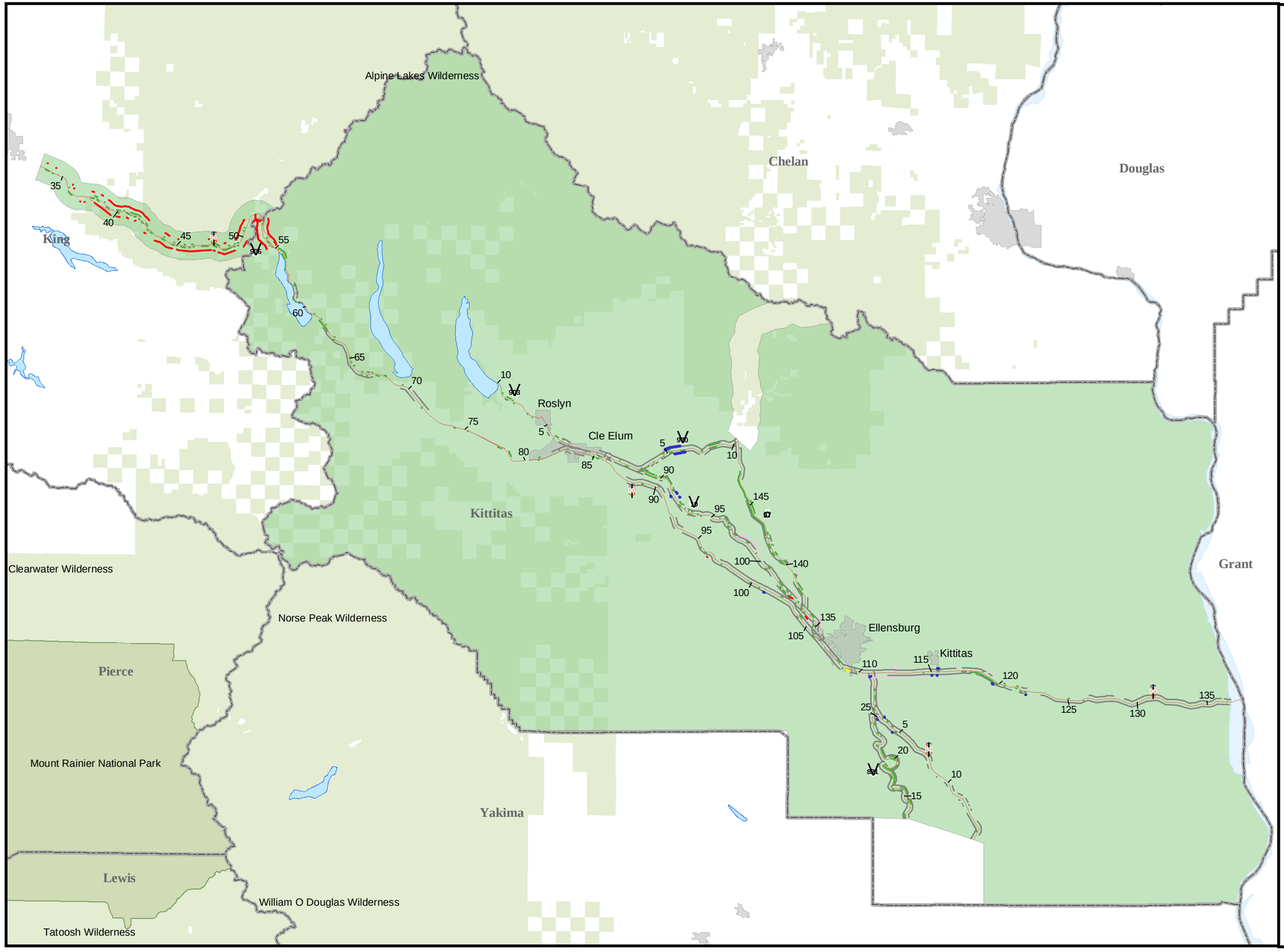
Appendix C:
South Central Region Area 1
Nuisance Weed Locations
Map 2 of 3



Appendix C:
South Central Region Area 1
Nuisance Weed Locations
Map 3 of 3



Legend

- Poison Hemlock
- St. Johnswort
- Whitetop
- Showy Milkweed
- Russian Thistle
- Mullein
- State Routes
- 75 Mile Post Markers
- County Boundaries
- Major Lakes
- Coast
- SC Region area 1
- City Limits
- National Forest
- National Park

0 5
Miles

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October 2006

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Table 3.0

Definitions: *Locations area distinquishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.*

Descriptions: *Brief explanation of special treatment required*

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
082	INC	RS	0.23	0.87	Ramp	
082	INC	RS	2.86	3.23	Ramp	
082	INC	RS	7.40	7.99	Ramp	
082	INC	RS	11.37	12.20	Ramp	
082	DEC	RS	11.85	11.13	Ramp	
082	DEC	RS	8.03	7.09	Ramp	
082	DEC	RS	3.19	2.58	Ramp	
082	DEC	RS	0.49	0.05	Ramp	
090	INC	RS	34.32	35.06	Ramp (USFS Easement alternating sections)	
090	INC	RS	37.46	37.61	Ramp (USFS Easement alternating sections)	
090	INC	RS	41.93	42.87	Ramp (USFS Easement alternating sections)	
090	INC	RS	45.26	46.02	Ramp (USFS Easement alternating sections)	
090	INC	RS	47.20	48.07	Ramp (USFS Easement alternating sections)	
090	INC	RS	52.01	52.31	Ramp (USFS Easement alternating sections)	
090	INC	RS	52.67	53.23	Ramp (USFS Easement alternating sections)	
090	INC	RS	54.50	55.16	Ramp (USFS Easement alternating sections)	
090	INC	RS	61.33	62.09	Ramp (USFS Easement alternating sections)	
090	INC	RS	62.73	63.28	Ramp (USFS Easement alternating sections)	
090	INC	RS	63.83	64.26	Ramp (USFS Easement alternating sections)	
090	INC	RS	70.01	70.80	Ramp (USFS Easement alternating sections)	
090	INC	RS	71.32	72.04	Ramp (USFS Easement alternating sections)	
090	INC	RS	73.84	74.39	Ramp	
090	INC	RS	77.88	78.48	Ramp	
090	INC	RS	79.38	79.86	Ramp	
090	INC	RS	80.08	80.68	Ramp	
090	INC	RS	82.76	82.95	Ramp	
090	INC	RS	84.22	84.63	Ramp	
090	INC	RS	85.65	86.19	Ramp	
090	INC	RS	88.76	89.50	Ramp	
090	INC	RS	93.40	94.04	Ramp	
090	INC	RS	100.88	101.48	Ramp	
090	INC	RS	105.50	106.22	Ramp	
090	INC	RS	109.47	109.92	Ramp	
090	INC	RS	110.40	111.47	Ramp	
090	INC	RS	115.20	115.97	Ramp	
090	INC	RS	125.51	126.38	Ramp	
090	INC	RS	136.17	136.61	Ramp	
090	DEC	RS	136.46	136.10	Ramp	

Table 3.0

Definitions: *Locations area distinquishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.*

Descriptions: *Brief explanation of special treatment required*

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
090	DEC	RS	125.93	125.16	Ramp	
090	DEC	RS	115.17	114.09	Ramp	
090	DEC	RS	110.79	110.11	Ramp	
090	DEC	RS	109.80	109.46	Ramp	
090	DEC	RS	106.38	105.58	Ramp	
090	DEC	RS	101.26	100.65	Ramp	
090	DEC	RS	93.84	93.28	Ramp	
090	DEC	RS	89.45	88.84	Ramp	
090	DEC	RS	86.06	85.48	Ramp	
090	DEC	RS	84.39	84.19	Ramp	
090	DEC	RS	83.09	82.75	Ramp	
090	DEC	RS	80.58	79.32	Ramp	
090	DEC	RS	78.31	77.68	Ramp	
090	DEC	RS	74.32	73.65	Ramp	
090	DEC	RS	71.75	71.32	Ramp	
090	DEC	RS	70.60	69.77	Ramp	
090	DEC	RS	64.06	63.41	Ramp	
090	DEC	RS	63.08	62.39	Ramp	
090	DEC	RS	55.07	54.42	Ramp	
090	DEC	RS	53.21	52.35	Ramp	
090	DEC	RS	52.21	51.78	Ramp	
090	DEC	RS	48.05	47.28	Ramp	
090	DEC	RS	45.89	45.14	Ramp	
090	DEC	RS	42.70	41.77	Ramp	
090	DEC	RS	39.90	39.61	Ramp	
090	DEC	RS	37.74	37.38	Ramp	
090	DEC	RS	35.01	34.19	Ramp	
090	Both	RS	41.59	68.47	National Forest	
090	Both	RS	69.33	70.01	Lake Easton State Park	
090	Both	RS	133.49	136.35	Ginkgo Petrified Forest State Park	
097	INC	RS	134.01	134.25	City of Ellensburg	Maintain by city
097	INC	RS	134.70	135.10	City of Ellensburg	Maintain by city
097	DEC	RS	135.10	134.70	City of Ellensburg	Maintain by city
097	DEC	RS	134.25	134.01	City of Ellensburg	Maintain by city
903	INC	RS	0.81	2.69	City of Cle Elum	Maintain by city
903	INC	RS	4.67	6.24	City of Roslyn	Maintain by city
903	DEC	RS	6.24	4.67	City of Roslyn	Maintain by city
903	DEC	RS	2.69	0.81	City of Cle Elum	Maintain by city

Table 3.0

Definitions: *Locations area distinquishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.*

Descriptions: *Brief explanation of special treatment required*

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
970	INC	RS	0.05	0.25	Ramp	
970	INC	RS	0.52	0.88	Ramp	
970	DEC	RS	0.50	0.36	Ramp	
970	DEC	RS	0.21	0.03	Ramp	
906	Both	RS	0.00	0.83	US Forest Service	

Washington State Department of Transportation

Integrated Vegetation Management Record

Org Code	County	Date		Vegetation Management Zone(s)
455110	Kittitas	4/18/2006		☐ Zone 1 ☒ Zone 2 ☐ Zone 3

Area: SR I-90 MP 111 to MP 113

Location: Site # 7 Part 2 , continued from Record # 121 RT

Check Appropriate Boxes: ☐ NB ☒ EB ☐ SB ☐ WB

☒ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Mitigation Site ☐ Stormwater ☐ Yard/Stockpile

Third Party Damage: ☐ Yes

Sensitive Sites: ☐ Aquatic ☐ Wetlands

Target: ☐ Noxious Weeds ☐ Nuisance Weeds ☐ Brush/Trees ☐ Hazard Tree ☒ Other

List Target/Species: Fertilized grass stand

Reason for Action:

☐ Noxious Weeds ☐ Nuisance Weeds ☐ Fire Prevention ☐ Restore Native Veg. ☐ Zone 1 Pilot ☐ Aesthetic
☐ Site Distance ☐ Hazard Vegetation ☐ Customer Request ☒ Enhance Vegetation ☐ Slope Stabilization ☐ Other

Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)

This was a test plot to gain information on the benefit of fertilizer on a diminishing grass stand. Our objective is to improve the existing grass stand which is sparse and weak. Applied N 60 - P 20 - K 20 , at 30 Gals. per acre. Applied fertilizer to zone 2 , 16 feet wide.

Approximate Acres to Accomplish: 2

Activities		Planned date of Treatment	Actual date of Treatment
Manual	☐ Digging ☐ Pulling ☐ Planting ☐ Lopping ☐ Scalping ☐ Other		
Mechanical	☐ Aerial Saw Work ☐ Tractor Brush Cutter ☐ Mower/Chain ☐ Manual Brush Cutting ☐ Tractor Mower ☐ Other		
Bio-Control	☐ Insect ☐ Pathogen ☐ Parasites Type/Species		
Cultural	☐ Burning ☐ Grading ☐ Seeding ☒ Fertilizing ☐ Grazing ☐ Soil Amendment ☐ Other	4-5-2006	4-5-2006
Chemical	Record Number		

#1 Evaluation and Date

#2 Evaluation and Date

#3 Evaluation and Date

Washington State Department of Transportation

Pesticide Application

Org. Code	County	Date of Application	Start / Finish	ICP	Stores Issue Ticket Number(s)
455110	Kittitas	9/25/2006	Start 1300 ○ AM ◉ PM Finish 1430 ○ AM ◉ PM	010A	

Area
SR I-90 MP 110 to MP 110 .66 and MP ____ to MP ____ and MP ____ to MP ____ and MP ____ to MP ____

Check Appropriate Boxes:
☐ NB ☒ EB ☐ SB ☐ WB
☒ Roadside ☒ Shoulder ☐ Median
☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride
☐ Interchange ☐ Bridge ☐ Ramp
☐ Yard/Stockpile
☐ Spot Spray ☒ Blanket Spray ☐ Banded Width
☐ Aquatic ☐ Wetlands

☒ Weeds ☒ Noxious Weeds ☐ Disease
☐ Brush ☐ Insects ☐ Other List Pest(s): Kochia, Thistle, Knapweed, grasses

Start Weather Conditions
Temperature 64 °F(°C) Wind (Direction From) NW Wind (Range) 0-1 mph(km/h)
◉ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Finish Weather Conditions
Temperature 66 °F(°C) Wind (Direction From) NW Wind (Range) 0-1 mph(km/h)
◉ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product Per Acre (hectare)	Unit	Total Daily Usage	Unit
4	Razor Pro	Pesticide	228-366	3666 DH-76	128	Ozl	640	Ozl
4	Spreader 90	Adjuvant	----------	86674	16	Ozl	80	Ozl
1	Water		----------		40	Gal	200	Gal
							0	
							0	
							0	

Total 5 **Acres(hectares) Treated at** 40 **gallons(liters) of spray per acre(hectare).**

Equipment Number	Tank Size	Calibration Date	Vehicle Speed	Nozzle Pressure	Width of Spray Pattern
8E29-12	1 1000 2 80 3 25 4 80 5 ____	9/19/06	8.5 mph(km/h)	40 PSI(kPa)	4-24 Feet(meter)

☐ Handspreader ☐ Backpack ☐ Handgun ☐ Fixed Nozzle ☒ Boom ☐ Other (Specify) ____
☐ Tank Mix (Conv.) ☒ Injection ☐ Invert

Operator Name	Operator Pesticide License No.	Operator Signature	Driver Name
Galen L. Rogers	39785 / 71901		Warren Hall

Remarks
GLR- EB-# 8

Preparing site for seeding

Buffer Truck Driver's Name
Harry Nelson

Pesticide Sensitivity Registration Applies: ☐ Yes ☒ No

Contacts

Division of Emergency Management (1-800-258-5990)

Additional Notes

DOT Form 540-506 EF Revised 9/2001

Distribution: OSC Maint. Operator Region File
Send OSC Copy Within 5 Days

Oz=Ounce Dry Lb=Pound
Oz=Ounce Liquid Ga=Gallon
Pt=Pint Qt=Quart
g= gram kg=kilogram
ml=Milliliter L=Liter